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HEWLETT-PACKARD COMPANY
P. O. Box 272400
Fort Collins, CO 80527-2400

EXAMINER

FLANDERS, ANDREW C

ART UNIT	PAPER NUMBER
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2644

DATE MAILED: 01/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/058,228

Applicant(s)

WILCOCK ET AL.

Examiner

Andrew C. Flanders

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-44 is/are rejected.
- 7) ☒ Claim(s) 1 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Oath/Declaration

The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:
The oath or declaration is not signed by the inventors.

Claim Objections

Claim 1 is objected to because of the following informalities: claim 1 reads: "...method for apparatus adapted..." which should apparently read "...method for an apparatus adapted..." Claim 1 also reads "the method comprising the apparatus" which is unclear to the examiner. It appears to the examiner as though the claim intends to read "the apparatus comprising a method of steps including" or something similar. For the purpose of expediting prosecution, it will be understood in that manner. Further, it also includes "receiving user input" which should apparently read "receiving a user" Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 – 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inanaga (U.S. Patent 5,526,429) in view of Yamazaki (U.S. Patent 6,343,130).

Regarding **Claim 1**, Inanaga discloses:

An user-interfacing method for apparatus adapted to represent items in an audio field by corresponding synthesized sound sources from where sounds related to the items appear to emanate (title and abstract), the apparatus being arranged to treat the audio field as divided into multiple segments independently of the portions of the sound sources in the audio field (i.e. obtaining the sense of a sound field as if a plurality of speaker apparatus were disposed at the virtual sound source positions to reproduce sounds; col. 11 lines 17 –21; the segments being the regions virtualized by the headphone speakers, not the actual speakers themselves. As an example Examiner points to Cashion U.S. Patent 6,421,446 Fig. 1. A virtualized sound field comprising various segments is disclosed which is created from the headphones, much in the same manner as Inanaga).

Inanaga does not disclose steps (a), (b) and (c) of claim1, specifically receiving the user input without constraining the user input to be indicative of a segment corresponding to the current facing direction of the user as claimed.

Yamazaki discloses:

(a) receiving user input indicative of at least one said segments without constraining the user input to be indicative of a segment corresponding to the current facing direction of the user,

(b) interpreting said user input to identify said at least one segment indicated thereby (i.e. in the case of an end-user application, for example a game, the localization of the sound image may be specified by a user operating an interactive input and output device. The specified localization is read by the end-user application; col. 5 lines 26 - 31).

Modifying Inanaga to allow operation and integration with a video game would thus read upon the limitation of:

(c) changing the audibility of the synthesized sound sources in said at least one segment identified in (b) (i.e. the sound localization provided by the Yamazaki art to the Inanaga art would adjust the sound to appear to emanate from a different location based upon the input).

It would have been obvious to one of ordinary skill in the art at the time of the invention to apply Yamazaki's sound localization technique for video games to the headphone localization system taught by Inanaga. One would have been motivated to do so to allow users of Inanaga to satisfy an end user enjoying stereophonic sound by running an interactive application such as a game on a personal computer; Yamazaki col. 2 lines 58 – 63.

Regarding **Claim 2**, in addition to the elements stated above regarding claim 1, the combination further discloses:

wherein (c) includes changing the audibility of the synthesized sound sources in said at least one segment from un-muted to at least partially muted (i.e. the sound localization provided by the Yamazaki art to the Inanaga art would adjust the sound to appear to emanate from a different location based upon the input Depending on the required re-orientation of the sound effects, it is inherent that the localization will cause the system to mute and un-mute the speakers in order to effectively move the simulated sound field sources).

Regarding **Claim 3**, in addition to the elements stated above regarding claim 2, the combination further discloses:

wherein the changing of the audibility of the sound sources in a said segment from un-muted to at least partially muted leaves the audibility of the sound sources in the other segments unchanged (i.e. the sound localization provided by the Yamazaki art to the Inanaga art would adjust the sound to appear to emanate from a different location based upon the input Depending on the required re-orientation of the sound effects, it is inherent that the localization will cause the system to mute and un-mute the speakers in order to effectively move the simulated sound field sources).

Regarding **Claim 4**, in addition to the elements stated above regarding claim 2, the combination further discloses:

wherein changing the audibility of the sound sources in a said segment from un-muted to an at least partially muted causes any previously at-least-partially muted sound sources in other segments to become un-muted (i.e. the sound localization provided by the Yamazaki art to the Inanaga art would adjust the sound to appear to emanate from a different location based upon the input Depending on the required re-orientation of the sound effects, it is inherent that the localization will cause the system to mute and un-mute the speakers in order to effectively move the simulated sound field sources).

Regarding **Claim 5**, in addition to the elements stated above regarding claim 1, the combination further discloses:

wherein the audibility of sound sources that have been at least partially muted as a result of said predetermined input, automatically returns to un-muted after a predetermined period (i.e. the sound localization provided by the Yamazaki art to the Inanaga art would adjust the sound to appear to emanate from a different location based upon the input Depending on the required re-orientation of the sound effects, it is inherent that the localization will cause the system to mute and un-mute the speakers in order to effectively move the simulated sound field sources).

Regarding **Claim 6**, in addition to the elements stated above regarding claim 1, the combination further discloses:

wherein (c) includes changing the audibility of the synthesized sound sources in said at least one segment from at least partially muted to un-muted (i.e. the sound localization provided by the Yamazaki art to the Inanaga art would adjust the sound to appear to emanate from a different location based upon the input Depending on the required re-orientation of the sound effects, it is inherent that the localization will cause the system to mute and un-mute the speakers in order to effectively move the simulated sound field sources).

Regarding **Claim 7**, in addition to the elements stated above regarding claim 6, the combination further discloses:

wherein changing the audibility of the sound sources in a said segment from at least partially muted to un-muted leaves the audibility of sound sources in the other segments unchanged (i.e. the sound localization provided by the Yamazaki art to the Inanaga art would adjust the sound to appear to emanate from a different location based upon the input Depending on the required re-orientation of the sound effects, it is inherent that the localization will cause the system to mute and un-mute the speakers in order to effectively move the simulated sound field sources).

Regarding **Claim 8**, in addition to the elements stated above regarding claim 6, the combination further discloses:

wherein changing the audibility of the sound sources in a said segment from at least partially muted to un-muted causes any previously un-muted sound sources in

other segments to become at least partially muted (i.e. the sound localization provided by the Yamazaki art to the Inanaga art would adjust the sound to appear to emanate from a different location based upon the input Depending on the required re-orientation of the sound effects, it is inherent that the localization will cause the system to mute and un-mute the speakers in order to effectively move the simulated sound field sources).

Regarding **Claim 9**, in addition to the elements stated above regarding claim 6, the combination further discloses:

wherein the audibility of sound sources that have been un-muted as a result of said predetermined input, automatically returns to at least partially muted after a predetermined period (i.e. the sound localization provided by the Yamazaki art to the Inanaga art would adjust the sound to appear to emanate from a different location based upon the input Depending on the required re-orientation of the sound effects, it is inherent that the localization will cause the system to mute and un-mute the speakers in order to effectively move the simulated sound field sources).

Regarding **Claim 10**, in addition to the elements stated above regarding claim 1, the combination further discloses:

wherein the apparatus treats the audio field as divided in azimuth and/or elevation to form said segments (the system simulates a plurality of speakers around a

users head which are rotated when the head rotates, along the horizontal plane; col. 11 lines 15 – 27 in Inanaga).

Regarding **Claim 11**, in addition to the elements stated above regarding claim 1, the combination further discloses:

wherein the segments are specified relative to a current facing direction of the user with the user being assumed to be in a reference position (when characteristics of the audio signals supplied to the headphones are varied in accordance with the direction of the head of the listener based on the table memorized in memory the characteristics of the audio signals can be varied in accordance with the direction of the head of the listener; col. 11 lines 20 – 27 in Inanaga).

Regarding **Claim 12**, in addition to the elements stated above regarding claim 1, the combination further discloses:

wherein the segments are specified relative to a presentation reference determined by a mounting configuration of audio output devices used to synthesize said sound sources (when characteristics of the audio signals supplied to the headphones are varied in accordance with the direction of the head of the listener based on the table memorized in memory the characteristics of the audio signals can be varied in accordance with the direction of the head of the listener; col. 11 lines 20 – 27 in Inanaga).

Regarding **Claim 13**, in addition to the elements stated above regarding claim 1, the combination further discloses:

wherein the segments are specified relative to an audio field reference that can be rotated relative to a presentation reference determined by a mounting configuration of audio output devices used to synthesize said sound sources (when characteristics of the audio signals supplied to the headphones are varied in accordance with the direction of the head of the listener based on the table memorized in memory the characteristics of the audio signals can be varied in accordance with the direction of the head of the listener; col. 11 lines 20 – 27 in Inanaga).

Regarding **Claim 14**, in addition to the elements stated above regarding claim 1, the combination further discloses:

wherein the division of the audio field into segments is specified to the apparatus by input from the user (i.e. for each set of tables, the shapes of the head and the auricles of the listener are varied and values of data are varied in response to characteristics of the headphone, one of the three sets of tables is selected by the switcher; col. 10 lines 15 – 25 in Inanaga. These inputs are input by the user and the rotation of the virtual speakers is based in part upon these inputs).

Regarding **Claim 15**, in addition to the elements stated above regarding claim 1, the combination further discloses:

wherein the division of the audio field into segments is set by a default specification (i.e. the virtual speakers are simulated and as the listeners head moves, the movement is based upon the variation from the standard direction; abstract the default segmentation being the initial direction of the user's direction).

Regarding **Claim 16**, in addition to the elements stated above regarding claim 1, the combination further discloses:

wherein the sound sources are arranged in groups with each group being associated with a respective audio-field reference relative to which the sound sources of the group are positioned (i.e. obtaining the sense of a sound field as if a plurality of speaker apparatus were disposed at the virtual sound source positions to reproduce sounds; col. 11 lines 17 –21 in Inanaga),

independently moving the audio-field references relative to a presentation reference which is determined by a mounting configuration of audio output devices used to synthesize said sound sources (when characteristics of the audio signals supplied to the headphones are varied in accordance with the direction of the head of the listener based on the table memorized in memory the characteristics of the audio signals can be varied in accordance with the direction of the head of the listener; col. 11 lines 20 – 27 in Inanaga);

the change in audibility of sound sources of a segment caused by said predetermined user input being applied to sound sources of all said groups (i.e. the

sound localization provided by the Yamazaki art to the Inanaga art would adjust the sound to appear to emanate from a different location based upon the input).

Regarding **Claim 17**, in addition to the elements stated above regarding claim 1, the combination further discloses:

wherein the sound sources are arranged in groups with each group being associated with a respective audio-field reference relative to which the sound sources of the group are positioned (i.e. obtaining the sense of a sound field as if a plurality of speaker apparatus were disposed at the virtual sound source positions to reproduce sounds; col. 11 lines 17 –21 in Inanaga),

the audio-field references being independently moveable relative to a presentation reference which is determined by a mounting configuration of audio output devices used to synthesize said sound sources (when characteristics of the audio signals supplied to the headphones are varied in accordance with the direction of the head of the listener based on the table memorized in memory the characteristics of the audio signals can be varied in accordance with the direction of the head of the listener; col. 11 lines 20 – 27 in Inanaga);

the change in audibility of sound sources of a segment performed in (c) being applied to sound sources of a selected one or more groups (i.e. the sound localization provided by the Yamazaki art to the Inanaga art would adjust the sound to appear to emanate from a different location based upon the input).

Regarding **Claim 18**, in addition to the elements stated above regarding claim 1, the combination further discloses:

wherein the audibility of sound sources in multiple segments is changed by the same said user input (i.e. the sound localization provided by the Yamazaki art to the Inanaga art would adjust the sound to appear to emanate from a different location based upon the input).

Regarding **Claim 19**, in addition to the elements stated above regarding claim 1, the combination further discloses:

wherein the audio filed is stabilized relative to one of:

- a user's head;
- a user's body;
- a vehicle in which the user is traveling;
- the world

this stabilization taking account of whether audio output devices are used to synthesize the sound sources are world, vehicle, body or head mounted, and , as appropriate, rotation of the user's head or body, or turning of the vehicle (when characteristics of the audio signals supplied to the headphones are varied in accordance with the direction of the head of the listener based on the table memorized in memory the characteristics of the audio signals can be varied in accordance with the direction of the head of the listener; col. 11 lines 20 – 27 in Inanaga).

Regarding **Claims 21 and 33**, Inanaga discloses:

An apparatus for providing an audio user interface in which items are represented in an audio field by corresponding synthesized sound sources from where sounds related to the items appear to emanate (title and abstract), the apparatus comprising:

storage means for storing segmentation data specifying a division of the audio field into multiple segments independently of the positions of the sound sources in the audio field (i.e. obtaining the sense of a sound field as if a plurality of speaker apparatus were disposed at the virtual sound source positions to reproduce sounds; col. 11 lines 17 –21; the segments being the regions virtualized by the headphone speakers, not the actual speakers themselves. As an example Examiner points to Cashion U.S. Patent 6,421,446 Fig. 1. A virtualized sound field comprising various segments is disclosed which is created from the headphones, much in the same manner as Inanaga).

Inanaga fails to explicitly disclose the remaining limitations of Claims 21 and 34, specifically the user input not constraining the user input to be indicative of a segment corresponding to the current facing direction of the user as claimed.

Yamazaki discloses:

input means for receiving a predetermined user input indicative of at least one said segments without constraining the user input to be indicative of a segment corresponding to the current facing direction of the user, the indication of a segment by said user input being an indication that the audibility of the sound sources encompassed by the segment is to be changed (i.e. in the case of an end-user application, for

example a game, the localization of the sound image may be specified by a user operating an interactive input and output device. The specified localization is read by the end-user application; col. 5 lines 26 - 31).

Modifying Inanaga to allow operation and integration with a video game would thus read upon the limitation of:

rendering-position determining means for determining, for each sound source, an associated rendering position at which the sound source is to be synthesized to sound in the audio field ;

audibility-determining means for determining the audibility of each sound source based on its rendering position, the segmentation data, and said user input ;

rendering means, including audio output devices, for generating an audio field in which said sound sources are synthesized at their associated rendering positions with audibility as determined by said audibility determining means (when characteristics of the audio signals supplied to the headphones are varied in accordance with the direction of the head of the listener based on the table memorized in memory the characteristics of the audio signals can be varied in accordance with the direction of the head of the listener; col. 11 lines 20 – 27 and it is possible for the listener to obtain a sense of a sound field as if a plurality of speakers were disposed at the virtual sound source positions; col. 11 lines 15 – 22 in Inanaga and the sound localization provided by the Yamazaki art to the Inanaga art would adjust the sound to appear to emanate from a different location based upon the input).

It would have been obvious to one of ordinary skill in the art at the time of the invention to apply Yamazaki's sound localization technique for video games to the headphone localization system taught by Inanaga. One would have been motivated to do so to allow users of Inanaga to satisfy an end user enjoying stereophonic sound by running an interactive application such as a game on a personal computer; Yamazaki col. 2 lines 58 – 63.

Regarding **Claims 22 and 34**, in addition to the elements stated above regarding claims 21 and 33, the combination further discloses:

wherein the audibility-determining means is arranged to be responsive to said predetermined user input to change the audibility of the synthesized sound sources in said at least one segment from un-muted to at least partially muted (i.e. the sound localization provided by the Yamazaki art to the Inanaga art would adjust the sound to appear to emanate from a different location based upon the input Depending on the required re-orientation of the sound effects, it is inherent that the localization will cause the system to mute and un-mute the speakers in order to effectively move the simulated sound field sources).

Regarding **Claims 23 and 35**, in addition to the elements stated above regarding claims 22 and 34, the combination further discloses:

wherein the audibility-determining means, in changing the audibility of the sound sources in a said segment from un-muted to an at least partially muted, is further operative to set the audibility of any previously at-least-partially muted sound sources in other segments to un-muted. (i.e. the sound localization provided by the Yamazaki art to the Inanaga art would adjust the sound to appear to emanate from a different location based upon the input Depending on the required re-orientation of the sound effects, it is inherent that the localization will cause the system to mute and un-mute the speakers in order to effectively move the simulated sound field sources).

Regarding **Claims 24 and 36**, in addition to the elements stated above regarding claims 22 and 34, the combination further discloses:

wherein the audibility-determining means is further operative to automatically return the audibility of sound sources that have been at least partially muted as a result of said predetermined input, to un-muted after a predetermined period. (i.e. the sound localization provided by the Yamazaki art to the Inanaga art would adjust the sound to appear to emanate from a different location based upon the input Depending on the required re-orientation of the sound effects, it is inherent that the localization will cause the system to mute and un-mute the speakers in order to effectively move the simulated sound field sources).

Regarding **Claims 25 and 37**, in addition to the elements stated above regarding claims 21 and 33, the combination further discloses:

wherein the audibility-determining means is arranged to be responsive to said predetermined user input to change the audibility of the synthesized sound sources in said at least one segment from at least partially muted to un-muted (i.e. the sound localization provided by the Yamazaki art to the Inanaga art would adjust the sound to appear to emanate from a different location based upon the input Depending on the required re-orientation of the sound effects, it is inherent that the localization will cause the system to mute and un-mute the speakers in order to effectively move the simulated sound field sources).

Regarding **Claims 26 and 38**, in addition to the elements stated above regarding claims 25 and 37, the combination further discloses:

wherein the audibility-determining means, in changing the audibility of the sound sources in a said segment from at least partially muted to un-muted, is further operative to set the audibility of any previously un-muted sound sources in other segments to at-least-partially muted. (i.e. the sound localization provided by the Yamazaki art to the Inanaga art would adjust the sound to appear to emanate from a different location based upon the input Depending on the required re-orientation of the sound effects, it is inherent that the localization will cause the system to mute and un-mute the speakers in order to effectively move the simulated sound field sources).

Regarding **Claims 27 and 39**, in addition to the elements stated above regarding claims 25 and 38, the combination further discloses:

wherein the audibility-determining means is further operative to automatically return the audibility of sound sources that have been un-muted as a result of said predetermined input, to at least partially muted after a predetermined period. (i.e. the sound localization provided by the Yamazaki art to the Inanaga art would adjust the sound to appear to emanate from a different location based upon the input Depending on the required re-orientation of the sound effects, it is inherent that the localization will cause the system to mute and un-mute the speakers in order to effectively move the simulated sound field sources).

Regarding **Claims 28 and 40**, in addition to the elements stated above regarding claims 21 and 33, the combination further discloses:

wherein the storage means is arranged for causing the segmentation data to divide the audio field into segments specified relative to a presentation reference determined by a mounting configuration of the audio output devices (it is possible for the listener to obtain a sense of a sound field as if a plurality of speakers were disposed at the virtual sound source positions; col. 11 lines 15 – 22 in Inanaga)

the rendering-position determining means being operative to determine the rendering positions of the sound sources relative to said presentation reference whereby the audibility determining means can directly determine the segment location of a sound source by comparing the rendering position of the sound source with the

segmentation data (i.e. when characteristics of the audio signals supplied to the headphones are varied in accordance with the direction of the head of the listener based on the table memorized in memory the characteristics of the audio signals can be varied in accordance with the direction of the head of the listener; col. 11 lines 20 – 27 in Inanaga and the sound localization provided by the Yamazaki art to the Inanaga art would adjust the sound to appear to emanate from a different location based upon the input Depending on the required re-orientation of the sound effects, it is inherent that the localization will cause the system to mute and un-mute the speakers in order to effectively move the simulated sound field sources).

Regarding **Claims 29 and 41**, in addition to the elements stated above regarding claims 21 and 33, the combination further discloses:

wherein the audio output devices are arranged for mounting off the user's head and the apparatus further comprises a head tracking arrangement for determining the angular offset between the user's current direction of facing and a presentation reference determined by a mounting configuration of audio output devices (i.e. when characteristics of the audio signals supplied to the headphones are varied in accordance with the direction of the head of the listener based on the table memorized in memory the characteristics of the audio signals can be varied in accordance with the direction of the head of the listener; col. 11 lines 20 – 27 and col. 10 lines 10 – 26 in Inanaga);

storage means is arranged for causing the segmentation data to divide the audio field into segments relative to a current facing direction of the user and the rendering-position determining means being operative to determine the rendering positions of the sound sources relative to said presentation reference; the audibility-determining means being operative to use said angular offset to relate the segmentation data to the presentation reference whereby to enable the segment location of a sound source to be determined (i.e. the angle is changed at every angle such that the listener can distinguish the head gyration angle with both ears when the listener turns the head; col. 10 lines 10 – 26 in Inanaga and the sound localization provided by the Yamazaki art to the Inanaga art would adjust the sound to appear to emanate from a different location based upon the input Depending on the required re-orientation of the sound effects, it is inherent that the localization will cause the system to mute and un-mute the speakers in order to effectively move the simulated sound field sources).

Regarding **Claims 30 and 42**, in addition to the elements stated above regarding claims 21 and 33, the combination further discloses:

wherein the storage means is arranged for causing the segmentation data to divide the audio field into segments specified relative to an audio field reference (i.e. obtaining the sense of a sound field as if a plurality of speaker apparatus were disposed at the virtual sound source positions to reproduce sounds; col. 11 lines 17 -21),

the apparatus further comprising offset means for controlling an offset between the audio field reference and a presentation reference determined by a mounting

configuration of the audio output devices; the rendering-position determining means being operative to determine the rendering positions of the sound sources relative to said presentation reference;

and the offset means being operative to provide a measure of said offset to the audibility determining means with the latter being arranged to use the measure of said offset to relate the segmentation data to the presentation reference where by to enable the segment location of a sound source to be determined. (i.e. when characteristics of the audio signals supplied to the headphones are varied in accordance with the direction of the head of the listener based on the table memorized in memory the characteristics of the audio signals can be varied in accordance with the direction of the head of the listener; col. 11 lines 20 – 27 and the angle is changed at every angle such that the listener can distinguish the head gyration angle with both ears when the listener turns the head; col. 10 lines 10 – 26).

Regarding **Claims 31 and 43**, in addition to the elements stated above regarding claims 21 and 33 and the combination further discloses:

Including user-operable means for modifying segmentation data (i.e. for each set of tables, the shapes of the head and the auricles of the listener are varied and values of data are varied in response to characteristics of the headphone, one of the three sets of tables is selected by the switcher; col. 10 lines 15 – 25).

Regarding **Claims 20, 32 and 44**, in addition to the elements stated above regarding claims 1, 21 and 33, the combination fails to disclose the limitations of claim 20 and 32.

However, using audio labels to select services is notoriously well known in the art. The combination is capable of items as audio labels for services selecting a service, much like any audio reproduction system. It would have been obvious to add the feature wherein at least some of the said items represented by the sound sources are audio labels for services, the method further involving selecting a service by selecting the corresponding audio-label sound source. One would have been motivated to do so in order to permit blind people to select menu items in an audio/video type of system.

Response to Arguments

Applicant's arguments with respect to claims 1, 21 and 33 have been considered but are moot in view of the new ground(s) of rejection necessitated by Applicant's amendment.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew C. Flanders whose telephone number is (571) 272-7516. The examiner can normally be reached on M-F 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (571) 272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

acf



HUYEN LE
PRIMARY EXAMINER